

What is claimed is:

1. A rotary actuator comprising:

a tube having first and second hydraulic ports formed separated a predetermined distance from each other and through which oil enters and is exhausted and at least two tube through holes penetrating a side surface of the tube;
an end cap coupled to the tube and having a first flange fixed to a predetermined first platform;

an axle rod including a second flange portion disposed at one side of the tube and fixed to a predetermined second platform to be rotated, a slant groove rod disposed in one portion of the tube and having at least two first slant grooves formed inclined on an outer circumferential surface, and an axle rod disposed in the other portion of the tube and sliding coupled to the end cap;

a piston including a piston head disposed between the tube and the axle rod and a slant groove body disposed between the tube and the slant groove rod, wherein at least two second slant grooves are formed on an outer circumferential surface of the slant groove body to be opposite to the direction of the first slant groove and at least two piston pin holes are formed at one side of the slant groove body;

a first pin installed at the piston pin hole and inserted in the first slant groove;

and

a second pin including a pin end portion penetrating the tube through hole and inserted in the second slant groove and a pin head formed on the pin end portion to be stepped and inserted in the tube through hole.

2. The rotary actuator as claimed in claim 1, wherein the piston pin holes are symmetrical formed in the slant groove body.

3. The rotary actuator as claimed in claim 1, wherein the tube through holes are symmetrical formed in the tube.

4. The rotary actuator as claimed in claim 1, further comprising sliding rings installed between the first flange portion and the tube and/or between the second flange portion and the tube.

5. The rotary actuator as claimed in claim 1, further comprising thrust bearings installed between the first flange portion and the tube and/or between the second flange portion and the tube.